



JUNE 23rd, 1949

MOTOR CYCLE

515

New Cycle Attachment

Engine Unit Driving Front Wheel by Roller

DELIVERIES of a new attachment for pedal-cycles—the G.Y.S.—are due to start next week. The attachment comprises a 49 c.c. two-stroke engine which drives the front wheel by means of a roller in contact with the tyre.

The G.Y.S. is entirely British in design and manufacture. The 40mm by 40mm bore and stroke three-port two-stroke engine has a lipped-crown Wellworthy liner shrunk and keyed in a light-alloy cylinder casting which is an integral part of the crankcase; this crankcase is of banjo shape, with a plate on the right-hand side and the roller housing on the other side. The light-alloy cylinder head is held down by four studs and accommodates a 10mm sparking plug and decompressor.

Light-alloy is also employed for the connecting rod, which has phosphor-bronze bushes at the small and the big ends. The big-end is carried on an overhanging crank, and the crankshaft extends across the front wheel, carries the Carborundum driving roller, and at the end drives the Wico-Pacy Bantam flywheel magneto. The shaft is supported by journal ball bearings.

The carburettor is a special Amal fitted with a strangler for starting from cold. A light-alloy stub bolted to the cylinder carries the carburet-

tor. Exhaust gases discharge into a light-alloy expansion chamber bolted to the cylinder-crankcase casting, and an outlet pipe discharges near the front wheel spindle.

A 3pt tank for petrol is carried above the engine on a light-alloy back plate. The bottom lugs of this back plate accommodate a transverse hollow spindle, on which pivots the engine to enable the roller to be disengaged from the tyre when power drive is not required. Clamped at the sides of the back plate are duralumin tubes. At the bottom of the tubes, and free to slide up and down to compensate for fork deflection, are phosphor-bronze lugs which fit on special adaptors screwed on to the ends of the standard wheel spindle. At the top, the duralumin tubes are clamped to the handlebars.

The right-hand tube carries a flat friction damper plate. The hand adjuster of this plate operates on a rod which is attached to the crankcase of the engine. At the top of the cutaway in the plate is a notch in which the damper rod locates to keep the engine in the swivelled-back position and the roller disengaged. When the engine is swivelled forward, and the roller is driving, it is held in contact with the tyre by a tension spring between the crankcase and the friction plate bottom lug.

Apart from the carburettor strangler, there is only one control. This is a handlebar lever which, in one direction of travel, opens the throttle, and in the other direction operates the decompressor.

A Norman cycle fitted with the G.Y.S. unit was taken for a short run. Once the engine was thoroughly warm it pulled well from about 6 m.p.h. to a normal maximum estimated at around 14 m.p.h., though probably 18-20 m.p.h. would be possible under favourable conditions. Starting from rest, with the decompressor in action, was easy.

The engine is claimed to give 1.2 b.h.p. at 3,500



The G.Y.S. motor attachment

r.p.m. Total weight of the complete unit is 14lb. Retail price is £21. The makers are G.Y.S. Engineering Co., Ltd., High Clements Yard, R. L. Stevenson Avenue, Westbourne, Bourne-mouth, Hants. Eustace Watkins are sole London distributors.